ROLM

ROLM Systems • A Siemens Company

January 4, 1993

Office of the Secretary
ATT: Ms. Donna Searcy
Federal Communications Commission
1919 M Street, NW
RM. 222
Washington, DC 20554

Subject: Reply Comments Regarding GEN Docket 90-314 & ET 92-100

Dear Ms. Searcy,

ROLM is pleased to present the enclosed reply comments (1 original, 11 copies) relating to the Notice of Proposed Rule Making and Tentative Decision, GEN Docket 90-314 and ET 92-100. We would like these comments to be considered during the Commission's deliberations on the rulings to be enacted which will impact these new wireless services.

Sincerely,
ROLM

Steven Sivitz
Program Manager - Wireless Systems

Enc. 12

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List A B C D E

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of:	)	GEN. Docket 90-314
Amendment of the Commission's	)	ET Docket 92-100
Rules to Establish New Personal	)	
Communications Services	)	

Reply Comments of ROLM

Introduction

ROLM, hereby submits additional comments on the above captioned proceeding. These comments are associated with industry filings which will affect User-PCS (U-PCS). U-PCS is primarily an in-building, business oriented application and very likely to be the first widely adopted implementation of the emerging radio-based personal communications. ROLM's experience in providing leading edge telecommunications technologies should be beneficial in providing the Federal Communications Commission (FCC or Commission) with pertinent perspectives on issues which will facilitate the introduction of these services.

The quality, and sheer volume, of the comments relating to this Notice[1] substantiates the importance this proceeding will have on the communications industry, corporate America and the general public. The over riding consensus is that

[1] Amendment of the Commission's Rules to Establish New Personal Communications Services, GEN Docket No. 90-314 and ET Docket 92-100.

Personal Communications Services (PCS) will have both interpersonal and financial benefits to all segments and regions of the population. Within this filing, ROLM will focus on those issues having the greatest impact on U-PCS and the timeliness of the Commission's rulings. Specifically, the following items are believed to have the most bearing on the U-PCS industry's ability to offer economically viable products:

- An adequate spectrum allocation for unlicensed services;
- Clear spectrum;
- Microwave reaccommodation;
- Technical guidelines for unlicensed services;
- Decoupling the licensed and unlicensed rulings.

I. The FCC Needs To Allocate A Minimum Of 40 MHz For Unlicensed U-PCS

The major question permeating the entire PCS debate is the amount of spectrum required to provide economical, high quality services. The FCC envisions an array of products and services being offered under the umbrella of unlicensed regulations[2]. These types of services will be the life blood for businesses intent on incorporating advanced wireless technology as a mechanism for improving productivity and

[2] Notice of Proposed Rule Making, GEN. Docket No. 90-314 and ET Docket No. 92-100. In paragraph 41, wireless PBXs, high and low speed data and cordless phones are identified by the FCC as the unlicensed applications.

introducing new services, while advancing corporate responsiveness and profitability.

In today's business environment, communication system capabilities are continually being pushed to their limit. Subsequently, enhancements to these systems are being introduced in shorter and shorter cycles. If past history is any indication of the future, then the growth of wireless business networks will quickly press the limits of the proposed 20 MHz allocation.

Even by only sampling the documents presented to the FCC, regarding the unlicensed allocation, it is evident that a minimum of 40 MHz is required for U-PCS. Who is more qualified to advise on this market's requirement than those companies whose business success is based upon understanding and forecasting product requirements.

Leaders in data communications, such as Hewlett-Packard, Apple Computer and Xircom, each have recommended additional spectrum[3] on the order of 50 MHz in total. Additionally, all of the major PBX manufacturers -- AT&T, Ericsson, Northern Telecom and ROLM[4] -- have justified a minimum of an additional 15 MHz based on wireless PBX traffic studies. The only companies with commercially available wireless PBX

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[3] Each of these companies have filed comments in this proceeding.
[4] See note 3.

adjuncts -- Rose Communications and Spectralink -- have also explained the requirement for additional spectrum[5]. Finally, the industry association representing U-PCS -- The Wireless Information Networks Forum -- has consistently filed comments[6] specifying the need for a minimum of 40 to 65 MHz.

The FCC will do a disservice to the marketplace by attempting to shoehorn many disparate services into less than 40 MHz. The quality and reliability of the applications will suffer, the designs will be more complex and the products will be more expensive. Without 40 MHz it will be too hard, too expensive and too "iffy" to implement wireless business technology.

II. Clear Spectrum is Required for U-PCS

A great deal of technical analysis, both actual radio experiments and computer modeling, has been done to determine the feasibility of unlicensed devices sharing the spectrum with fixed microwave. Since most of this work has previously been presented to the FCC, ROLM simply wishes to endorse the position that U-PCS cannot share the spectrum with microwave incumbents on a co-primary basis. It is believed, though, that under certain circumstances with the

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5 See note 3.

6 See this Notice and Comments of Wireless Information Networks Forum, ET Docket No. 92-9, June 8, 1992.

appropriate mechanisms, some types of systems[7] may be able to operate prior to total band clearing. ROLM asks that the Commission not preclude the deployment, under specific regulatory guidelines, of these types of products.

III. The FCC Should Be Innovative With The Methods Employed To Reaccommodate The Incumbent Microwave Licensees

An overriding theme throughout this emerging technology proceeding is the use of INNOVATION. There are reports on innovative technologies for interference avoidance, innovative types of services and innovative types of licensing schemes, like the national consortium idea(s) proposed by Interdigital Communications[8] or MCI[9]. The FCC will best serve the incumbent and potential 2 GHz users by adopting a comparable creative thinking philosophy to reaccommodating the microwave users.

Transitioning the Part 94 users to alternative media, over a period of time, via financial compensation, is not a an innovative process for reaccommodation. An alternative, is the methodology proposed by Apple Computer in this Notice and should be given serious consideration as an interim step

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[7] Those systems with a fixed infrastructure, along with frequency coordination, should be able to operate in a noninvasive fashion.

[8] Comments of Interdigital Communications Corp., GEN Docket No. 90-314, ET Docket No. 92-100, pg. 17.

[9] Comments of MCI Telecommunications Corp., GEN Docket No. 90-314, pg. 4.

for facilitating the early deployment of PCS. Are we certain that the frequencies allocated to each licensee in a particular area have been assigned with spectrum efficiency as a prerequisite? Why not take advantage of the advances in computer modeling capabilities, coupled with the knowledge gained in frequency reuse from the cellular industry and a re-analysis of TIA's Bulletin 10E, to "re-pack" the microwave licensees in the most geographically optimized fashion.

With cooperation from the Federal government, the re-packing could be enhanced by the assignment of some portion of the Part 94 users to the 1710 to 1850 MHz band[10]. This type of approach, i.e. reconfiguring the licensees within the 2 GHz band, would have a positive impact in several ways:

1. a large percentage of microwave users would not have to vacate the 2 GHz band;
2. the overall costs of transitioning the microwave users would be reduced significantly;
3. the time it will take to transition microwave users would be reduced significantly;
4. initial services could be offered sooner on spectrum that has less potential for interference;
5. less potential for emerging services to feel pressured into paying exorbitant relocation fees.

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[10] Considering the positive impact PCS will have on the U.S. economy and technology base, the Federal Government has an obligation to actively assist in the introduction of emerging technologies. The industry is not asking for financial support, which is often provided by foreign governments to their industries, but rather a modest request to make available a portion of a national resource which is capable of accommodating these nationwide services.

IV. The FCC Should Adopt Technical Guidelines For U-PCS

In order to avoid chaos in the unlicensed band, there needs to be a minimum amount of structure which is intended to prevent abuse and interference. The primary guidelines need to incorporate the following:

1. Digital modulation should be required;
2. Maximum power should be 250 mW, as higher power levels will increase the interference potential of geographically adjacent systems;
3. Any regulated channelization plan should be flexible and able to accommodate all reasonably viable access technologies;
4. Implementation of a spectrum sharing etiquette should be required for FCC equipment authorization. The etiquette should not bias one technology versus others.

Structuring this unlicensed band may appear to be a contradiction in terms. Here again, the Commission needs to be innovative and forward thinking in its approach to handling the array of services it has intentionally left loosely defined or identified[11].

V. The FCC Should Separate The Rulings For Unlicensed Devices From The Rulings For Licensed Services

ROLM requests that the FCC decouple the rule makings for unlicensed services from those associated with licensed PCS. There are major issues targeted solely at licensed services,

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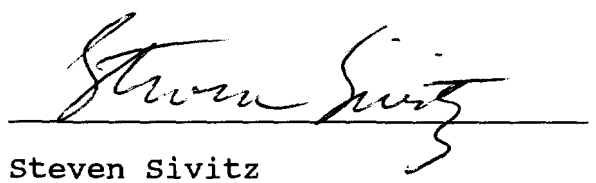
[11] Notice at para. 29. Also, First Report and Order and Third Notice of Proposed Rule Making, ET Docket 92-9, RM.-7981, RM.-8004 at para. 21 & 39.

which require careful analysis of the implications of these rulings. The FCC has been presented very compelling arguments for and against each issue. With many of the licensed decisions intrinsically coupled to others -- how much spectrum, how many licensees, definition of the service areas -- unless the two processes are dealt with separately, defining all of these positions is likely to extend the decisions for U-PCS.

VI. Conclusion

The Commission is keenly aware that "unnecessary delay could threaten the U.S. leadership role in communications technology."[12] It is hoped that ROLM's participation in this entire proceeding has provided the necessary credible information and rationale towards resolving the regulatory dilemmas which have the industry running in place.

Respectfully Submitted



Steven Sivitz
ROLM
4900 Old Ironsides Dr.
Santa Clara, CA 95052-8075
408-492-2585
January 5, 1993

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[12] Notice at para. 139.

Certificate of Service

I, Steven Sivitz, do certify that on January 5, 1993, copies of the foregoing Reply Comments of ROLM, were mailed via the United States Postal Service, first class, postage prepaid to the persons on the following service list.

Steven Sivitz

Service List

Andrew Lipman
Swindler & Berlin
3000 K St., NW
Washington, DC 20007

James Lovette
Apple Computer
One Infinite Loop
Cupertino, CA 95014

Thomas Stroup
Mark Golden
Telocator
1019 19th St., NW
Washington, DC 20036

Margaret deB. Brown
Pacific Telesis
130 Kearny St.
RM 3659
San Francisco, CA 94108

Jack Taylor
TSS
6116 Brassie Way
Redding, CA 96003

NATA
c/o Robert Aldrich
Keck, Mahin & Cate
1201 New York Ave., NW
Washington, DC 20005

Utilities Telecommunications
Council
1140 Connecticut Ave., NW
Suite 1140
Washington, DC 20036

Henry Goldberg
Goldberg & Spector
1229 19th St., NW
Washington, DC 20036

Jerome Kaufman
Alexander Resources
5222 Via Buena Vista
Scottsdale, AZ 85253

Ellen Deutsch
Citizens Utilities
1035 Placer St.
Redding, CA 96001

John McNulty
Rose Communications, Inc.
2390 Walsh Ave.
Santa Clara, CA 95051

John G. Lamb, Jr.
Northern Telecom Inc.
2100 Lakeside Blvd.
Richardson, TX 75082

AT&T
c/o Its Attorneys
295 N. Maple Ave.
RM 3244J1
Basking Ridge, NJ 07920

Ericsson
c/o David Jatlow
Young & Jatlow
2300 N St., NW
Washington, DC 20037